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EXAMINER	
HOANG, THAI D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/606,948	Applicant(s) ZETTINGER ET AL.	
	Examiner THAI D. HOANG	Art Unit 2463	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 21 July 2010.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

(i) Claims 1-7, 9, 11, 12-18, 20, 22 and 23 rejected under 35 U.S.C. 103(a) as being unpatentable over Simons (US006332198B 1) in view of Ishiwatari (US 6,201,788).

Regarding Claims 1 and 23, Simons discloses an apparatus (see FIG. 35A-B, a network device 540) for switching signals (see col. 46, line 33-40; packets, frames, or cells) in a network (see FIG. 35, SONET, ATM, or MPLS network; see col. 45, line 20-33; see col. 46, line 16-27), comprising:

multiple first switch fabrics (see FIG. 35A-B, cross connect cards 562, 564, 566, 568 in Switching Quadrants 1-4) to perform facility protection switching at a subrate of the signals (see FIG. 36a-b; see col. 45, line 60-67; see col. 49, line 8-25; each cross connect card performs lines/facility redundancy/protection switching schemes (i.e. Automatic Protection Switching (APS), 1+1, 1:1, 1 :N) at serialized payload time slot(s) electrical STS-1 path rate (i.e. line rate 51.84 Mpbs or payload rate 50.112 Mpbs) or STS-3c path rate (i.e. line rate 155.52 Mpbs or payload rate 150.336 Mpbs) on the packets/frames/cells; note that low speed channelized electrical path rate is a

subrate/smaller rate than high speed multiplexed optical SONET rate; see col. 46, line 5 to col. 47, line 32; see col. 48, line 10-25; see col. 49, line 10-15) relative to the signals received by the multiple first switch fabrics (see FIG. 35 A-B, subrate/smaller STS-1 rate (i.e. line rate 51.84 Mbps or payload rate 50.112 Mbps) or subrate/smaller STS-3c path rate (i.e. line rate 155.52 Mbps or payload rate 150.336 Mbps) is relative/comparative to high speed multiplexed SONET signals at the ports of cross connects; see col. 46, line 15-30, 60-65; see col. 48, line 32-54);

a second switch fabric (see FIG. 35A-B, switching Fabric Card 570) coupled to the first switch fabrics (see FIG. 35A-B, connecting with cross connect cards 562, 564, 566, 568) via respective switch interface modules (see FIG. 35A-B, via corresponding/respective forwarding cards 546, 548,550, 552) to switch a subset of the signals (see FIG. 35A-B, switching separated/divided/detached packets/cells/frames received from quadrants 1-4) in a non-facility protection switching manner among the first switch fabrics (see col. 45, line 40 to col. 46, line 30; see col. 47, line 53 to col. 48, line 11; see col. 50, line 60-67; switching fabric card does not perform lines/facility redundancy/protection switching schemes with/between the quadrants).

Although Simons discloses "a subrate of the signals relative to the signals are received by the multiple first switch fabrics" as set forth above, but Simons does not explicitly disclose relative to *"a rate at which"* the signals are received. However, Ishiwatari teaches multiple first switch fabrics (see FIG. 9A-B, 10, transmission devices 10 A-D; see FIG. 10, 20; see col. 6, line 40-56) to perform facility protection switching at a subrate of the signals (see FIG. 10, performing STS-1 facility protection switching

between working signal processing part 23, UT(1-W)- (4-W), and protection signal processing part 33 UT (1-P)-(4-P) at individual STS-1 channel subrate (e.g. each STS-1 channel# 1 to 24); note that each Demux 22 signal rate (e.g. STS-1 rate with line rate 51.84 Mbps) is less than multiplexed signal OC-N) relative to a rate at which the signals are received by the multiple first switch fabrics (see FIG. 10), relative to multiplexed Optical OC-N signal rate (e.g. OC-48 (2488 Mbps), OC-192 (9953 Mbps)) at which OC-N signal are received by multiple transmission devices (see col. 7, line 13-65; see col. 8, line 1-69). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt *"a rate at which"* as taught by Ishiwatari in the system of Simons, so that it would enable coexistence between different transmission methods or protocols which provide flexible and expansible system; see Ishiwatari col. 5, line 1-5.

Regarding Claim 12, Simons discloses a method (see FIG. 35A-B, devices 540 processing the method steps) for switching signals (see col. 46, line 33-40; packets, frames, or cells) in a network (see FIG. 35, SONET, ATM, or MPLS network; see col. 45, line 20-33; see col. 46, line 16-27), comprising:

performing facility protection switching at a subrate of the signals by multiple first switch fabrics (see FIG. 36a-b; see col. 45, line 60-67; see col. 49, line 8-25; each cross connect cards 562, 564, 566, 568 in Switching Quadrants 1-4 performs lines/facility redundancy/protection switching schemes (i.e. Automatic Protection Switching (APS), 1 +1, 1:1, 1:N) at serialized payload time slot(s) electrical STS-1 path rate (i.e. line rate 51.84 Mpbs or payload rate 50.112 Mpbs) or STS-3c path rate (i.e. line rate 155.52

Mpbs or payload rate 150.336 Mpbs) on the packets/frames/cells; note that low speed channelized electrical path rate is a subrate/smaller rate than high speed multiplexed optical SONET rate; see col. 46, line 5 to col. 47, line 32; see col. 48, line 10-25; see col. 49, line 10-15) relative to the signals received by the multiple first switch fabrics (see FIG. 35 A-B, subrate/smaller STS-1 rate (i.e. line rate 51.84 Mbps or payload rate 50.112 Mbps) or subrate/smaller STS-3 c path rate (i.e. line rate 155.52 Mbps or payload rate 150.336 Mbps) is relative/comparative to high speed multiplexed SONET signals at the ports of cross connects; see col. 46, line 15-30, 60-65; see col. 48, line 32-54);

switching a subset of the signals (see FIG. 35A-B, FIG. 35A-B, switching Fabric Card 570 switching separated/divided/detached packets/cells/frames received from cross connects quadrants 1-4) in a non-facility protection switching manner among the first switch fabrics by a second switch fabric (see col. 45, line 40 to col. 46, line 30; see col. 47, line 53 to col. 48, line 11; see col. 50, line 60-67; switching fabric card does not perform lines/facility redundancy/protection switching schemes with/between the quadrants).

Although Simons discloses "a subrate of the signals relative to the signals are received by the multiple first switch fabrics" as set forth above, but Simons does not explicitly disclose relative to *"a rate at which"* the signals are received. However, Ishiwatari teaches multiple first switch fabrics (see FIG. 9A-B, 10, transmission devices 10 A-D; see FIG. 10, 20; see col. 6, line 40-56) to perform facility protection switching at a subrate of the signals (see FIG. 10, performing STS-1 facility protection switching

between working signal processing part 23, UT(1-W)- (4-W), and protection signal processing part 33 UT (1-P)-(4-P) at individual STS-1 channel subrate (e.g. each STS-1 channel # 1 to 24); note that each Demux 22 signal rate (e.g. STS-1 rate with line rate 51.84 Mbps)) is less than multiplexed signal OC-N) relative to a rate at which the signals are received by the multiple first switch fabrics (see FIG. 10, relative to multiplexed Optical OC-N signal rate (e.g. OC-48 (2488 Mbps), OC-192 (9953 Mbps)) at which OC-N signal are received by multiple transmission devices; see col. 7, line 13-65; see col. 8, line 1-69). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt “a rate at which” as taught by Ishiwatari in the system of Simons, so that it would enable coexistence between different transmission methods or protocols which provide flexible and expansible system; see Ishiwatari col. 5, line 1-5.

Regarding Claims 2 and 13, Simons discloses wherein the first and second switch fabrics are coupled to a single point of control (see FIG. 35A, Processor 542 connects with cross connect cards 562, 564, 566, 568 in quadrants 1-4 and switching fabric card 570; see col. 45, line 34, line 1-55).

Regarding Claims 3 and 14, Simons discloses wherein the first switch fabrics include less configuration than the second switch fabric (see FIG. 35 A-B, cross connect cards 562, 564, 566, 568 each quadrant 1-4 processes each received packet/frame/cell "locally" with less/small configuration. However, switching fabric card processes each receiving packet/frame/cell from the pluralities of quadrants "globally" with more/large

configuration. Thus, it is clear that each cross connect cards 562, 564, 566, 568 has less/small configuration than the switching fabric card; see col. 45, line 34 to col. 46, line 15; see col. 50, line 60-67).

Regarding Claims 4 and 15, Simons discloses wherein the first switch fabrics include less granularity than the second switch fabric (see FIG. 35 A-B, cross connect cards 562, 564, 566, 568 in quadrant 1-4 processes each received packet/frame/cell "locally" with less/few granular/minute switching. However, switching fabric card processes each receiving packet/frame/cell from the pluralities of quadrants "globally" with more/large granular/minute switching. Thus, it is clear that cross connect cards 562, 564, 566, 568 has less/few granular/minute switching than the switching fabric card; see col. 45, line 34 to col. 46, line 15; see col. 50, line 60-67).

Regarding Claims 5 and 16, Simons discloses wherein the first switch fabrics also perform local switching with the multiple first switch fabrics (see FIG. 35A-B, cross connect cards 562, 564, 566, 568 in the quadrant 1-4 performs "local" switching from universal port card 554 to forwarding card 546; or performs "local" switching from one cross-connection card 562 in one quadrant to another cross-connection card in another quadrant; see col. 49, line 26 to col. 50, line 64).

Regarding Claim 6, Simons discloses redundant first (see FIG. 35A-B, cross connect cards 562b, 564b, 566b, 568b are redundant; see col. 49, line 8-67) or second switch fabrics (see FIG. 35A-B, redundant switching fabric card 570b; see col. 45, line 35-55; see col. 50, line 60- 67).

Regarding Claims 7 and 18, Simons discloses wherein the first or second switch fabrics support Time Division Multiplexing (TDM) switching (see col. 46, line 15-30; switching TDM stream) or fixed-length switching (see col. 46 line 15-30; see col. 47, line 14 to col. 48, line 25; ATM cells (i.e. each ATM cell has fixed length 53 bytes).

Regarding Claim 9, Simons discloses the coupling between the first and second switch fabrics is configurable (see FIG. 9, 35A-B, a combined system of user computer work station 62 which include NMS 60 and a processor 542 configures the connection between cards in the network device (i.e. configuration/provision between line cards (in quadrants) and switch fabrics; see col. 14, line 1 to col. 18, line 65).

Regarding Claim 17, Simons discloses redundant facility protection switching (see FIG. 35A-B, cross connect card in quadrant 2 is redundant of cross connect card in quadrant 1 for facility/line protection switching since the cross-connect card 562 are connected; see col. 49, line 8-67) and redundant non-facility protection switching (see FIG. 35A-B, redundant switching fabric card 570b; see col. 45, line 35-55; see col. 50, line 60-67).

Regarding Claim 20, Simons discloses adjustably configuring coupling between the multiple first switch fabrics and the second switch fabric (see FIG. 9, 35A-B, a combined system of user computer work station 62 which include NMS 60 and a processor 542 changes/adjusts configuration between the line cards (in quadrants) and switch fabrics; see col. 23, line 46 to col. 25, line 15).

Regarding Claims 11 and 22, Simons discloses wherein the facility protection switching includes Linear Automatic Protection Switching (LAPS) and 1:n protection switching (see col. 45, line 60-67; see col. 49, line 8-25; performs lines/facility redundancy/protection switching schemes (i.e. Automatic Protection Switching (APS), 1+1, 1:1, 1 :N) on the packets/frames/cells). Simons does not explicitly disclose "Unidirectional Path Switched Ring (UPSR) protection switching and Bidirectional Line Switched Ring (BLSR) protection switching". However, UPSR and BLSR protection switching are well known in the art disclosed by standards such as GR-1230-CORE (for BLSR) and GR-1400-CORE (for UPSR) (see www.telcordia.com) so that a network device can interoperate with other network devices using the standard protection switching protocols. In particular, Ishiwatari discloses Unidirectional Path Switched Ring (UPSR) protection switching and Bidirectional Line Switched Ring (BLSR) protection switching (see col. 7, line 12-25; see col. 9, line 64 to col. 10, line 5). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt "Unidirectional Path Switched Ring (UPSR) protection switching and Bidirectional Line Switched Ring (BLSR) protection switching", as taught by Ishiwatari in the system of Simons, so that it would provide enable coexistence between different transmission methods or protocols which provide flexible and expansible system; see Ishiwatari col. 5, line 1-5.

(ii) Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simons and Ishiwatari in view of Taniguchi (US Pat. 6456587B2).

Regarding Claims 8 and 19, Simons discloses the first switch fabrics perform facility protection switching in response to multiple simultaneous failures in the network (see col. 49, line 6-26; see col. 45, line 55 to col. 46, line 12; cross connects in quadrants perform facility/line protection switching (APS, Automatic Protection Switching, 1+1, 1:1, 1:N) upon failures simultaneously/parallel). Neither Simons nor Ishiwatari not explicitly disclose "within a predetermined time span". However, a switch performing a facility protection switching within predetermined time of 50 ms or less is well known in the art as disclosed by industry standard GR-253-CORE (see attached) so that subscribers on the failed facility would not be affected due to a failure. In particular, Taniguchi teaches the switch fabrics perform facility protection switching within a predetermined time span in response to multiple simultaneous failures in the network (see col. 1, line 52-58; col. 7, line 10-15; switch fabric performing APS switching at no more than 50 ms due to a plurality of failures in the network). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "within a predetermined time span", as taught by Taniguchi in the combined system of Simons and Ishiwatari, so that it would provide switching at a very high speed and at very fast time after detection of failure; see Taniguchi col. 1, line 50-60.

(iii) Claims 10 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simons and Ishiwatari, and further in view of Li (US Pub. 2004/0213205A 1).

Regarding Claims 10 and 21, Simons discloses switching plurality of protocols between cross connect cards in quadrants 1-4 and switching fabrics 570 (see FIG. 35A-B, see col. 49, line 45 to col. 50, line 67). Neither Simons nor Ishiwatari explicitly disclose “a content processor coupled to and between the first and second switch fabric to convert the signals from a first protocol to a second protocol”. In particular, Li teaches a content processor (see FIG. 2, switching circuit 70 or 71) coupled to and between the first (see FIG. 2, ATM/IP switch fabric 66) and second switch fabric (see FIG. 2, TDM switch fabric 62) to convert the signals from a first protocol (see FIG. 2, ATM/IP protocol) to a second protocol (see FIG. 2, TDM/PCM protocol); see pages 2-3, paragraph 22-25. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt a content processor coupled to and between the first and second switch fabric to convert the signals from a first protocol to a second protocol as taught by Li in the combined system of Simons and Ishiwatari, so that it would provide very good economics in scale to high port density; see Li page 5, paragraph 35.

Response to Arguments

Applicant's arguments filed on 07/21/2010 have been fully considered but they are not persuasive.

Page 6, Applicants argued, “Simons’ cross connect cards may carry Time Division Multiplex (TDM) byte streams, but they cannot perform protective switching at the time slot granularity within the TDM stream, and, consequently, cannot perform

switching at a subrate of the TDM stream." Examiner respectfully disagrees. Simons clearly discloses this feature at col. 46, line 5 – col. 47, line 32, and figures 35A-B and 36A-B, wherein the received rate at OC-48 and output at STS-1/STS-3 line rate.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, one of ordinary skill in the art would be able to modify Simons' system by adapting the rate disclosed by Ishiwatari into Simons' system for advantages cited above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THAI D. HOANG whose telephone number is (571)272-3184. The examiner can normally be reached on Monday-Friday 10:30am-19:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ferris Derrick can be reached on (571) 272-3123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thai D Hoang/
Primary Examiner, Art Unit 2463